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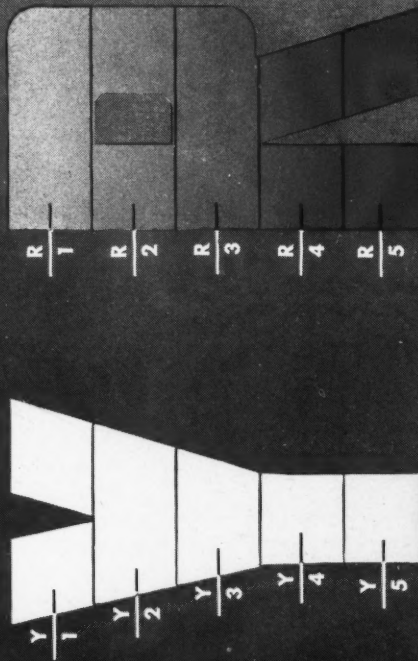
Digest



OCTOBER 1943

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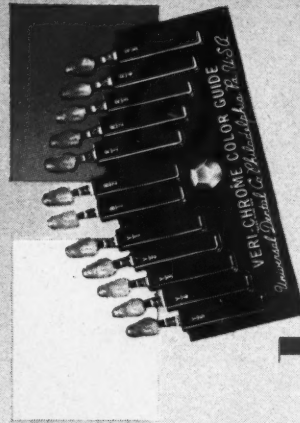
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THE DENTAL Digest

VOL. 49

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PERLEY J. LESSARD, D.D.S. (University of Maryland, 1921) is another general practitioner who twice before has written for us on the subject of acrylic restorations: In May, 1941 Doctor Lessard described a technique for a combination removable bridge; in January of this year, an acrylic-

metal angular restoration for anterior teeth was suggested.

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The Open Surgical Method of Treating Jaw Infections

M. L. DE BATS, D.D.S. and W. H. PHILLIPS, D.D.S., M.S., Detroit

DIGEST

Previous to the application of the open method of surgical treatment, infections of the jaws usually failed to respond rapidly to treatment. Many of these cases were unduly prolonged in treatment, and there was a great deal of pain. Occasionally these cases developed into an osteomyelitis which may have been caused by lack of adequate drainage.

The open method of surgical treatment when applied to jaw infections reduces the length of time for resolution to take place; reduces pain and discomfort, and in many cases prevents an extension of the infection to other parts of the jaw.

INFECTIONS of the jaws and face give anxiety to the practicing dentist. This is especially true of the acute infections with their alarming symptoms of swelling, pain, and fever. In the past many methods of treating jaw infections have been advocated. Most of the methods, however, did not provide for free drainage of the infected area, so that many failures were encountered. Free drainage of infected areas, either of the face and neck or the tooth socket itself, is important as the controlling factor in rapid and satisfactory recovery. An alarming picture is presented in an acutely edematous face and neck. It is not the intention of this article to discuss cellulitis, but to stress the advisability of pus evacuation either by intra-oral or extra-oral incision. It has been our experience that no satisfactory recovery is made without free

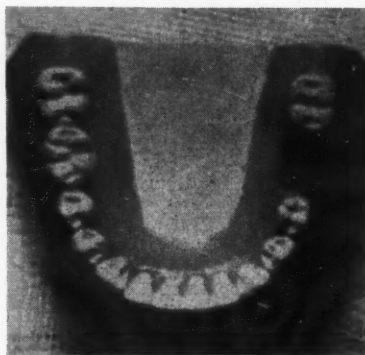


Fig. 1A

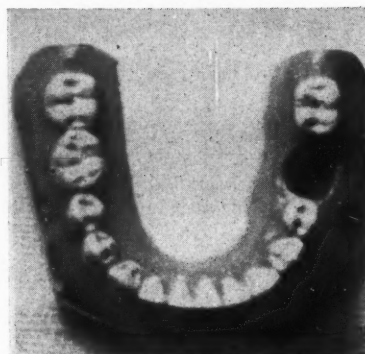


Fig. 1B

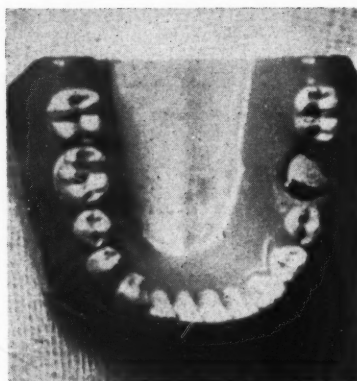


Fig. 1C

Fig. 1—A, Appearance of infected socket with inadequate drainage caused by overhanging gum tissue. B, Appearance of socket after removal of necrotic septum and debris. Overhanging and excessive gum tissue removed. C, Surgical dressing in socket to maintain free drainage.

and unimpeded drainage. This has

also been the experience of general surgeons in treating bone infections in other parts of the body. They have found recently that spontaneous healing of the bone takes place when free drainage is established and maintained, healing being allowed from the bottom of the wound as granulation progresses. The recent use of the sulfa drugs applied locally has aided greatly in hastening the healing process.

Before the advent of the sulfonamides we had been using the open method of preventing and treating jaw infections. The uniformity of success attained by this method has proved itself in our practice for many years. Too many surgeons have been interested in the immediate esthetic appearance of the surgical procedure rather than in an uneventful and quick recovery. This approach resulted in unnecessary pain, swelling, and residual infection which could be designated as a local osteomyelitis with all the potentialities of a generalized osteomyelitis.

The use of the open method of treatment is indicated in (1) infected lower third molars; (2) infected and painful sockets following extractions; (3) palatal abscesses.

Technique

The general technique employed in the open method of surgical treatment consists of three steps: First, incision and drainage or rather excision of all pathologic tissue over the area to permit free and unobstructed drainage; second, the application of sulfanilamide powder into the bottom of the wound; third, the placing of a surgical dressing in the wound to maintain adequate drainage. The use of a suction is advantageous in all cases to remove pus and debris from the wound before applying the sulfanilamide and dressing. Dressings should be changed every three or four days. Irrigation with a warm

aqueous solution of 50 per cent urea or physiologic salt solution is indicated each time that the dressing is changed. The surgical dressing consists of a strip of one-half inch sterile plain gauze mixed with a surgical cement. The size of the gauze strip varies for each case, but should be large enough just to fill the wound without packing it.

The formula for surgical cement is as follows:

Powder: Zinc oxide, 5 parts
Asbestos fibers, $\frac{1}{2}$ part
Rosin, 1 part
Liquid: Eugenol or Dentalone
(Mix to a thin consistency)

Specific Techniques for Lower Third Molars, Infected Sockets, and Palatal Abscesses

Lower Third Molars—The tissue overlying unerupted or impacted lower third molars is nearly always pathologic and will eventually slough or become invaginated in the empty socket after the tooth is removed, thus inhibiting adequate drainage. Excision of this overlying soft tissue is indicated, therefore, in all surgical procedures for the removal of impacted lower third molars.

1. This tissue overlying the unerupted tooth is removed in the form of an inverted "V." The initial incision is started approximately 1 cm. distally to the crown of the lower third molar over the external oblique ridge and is carried forward along the ridge to the buccal gingival surface of the lower first molar. The second incision is carried forward from the most distal point of the buccal incision to the gingival-lingual surface of the second molar. Do not bring the incision too far lingually into vital structures. The third incision follows the distal surface of the second molar from lingual to buccal, detaching the soft tissue from the distal surface of the second molar.

2. This triangular section of tissue is then removed by means of a periosteal elevator and tissue forceps.

3. After completing the removal of the impacted tooth and its follicle, all blood and debris are removed from the socket by means of the suc-



Fig. 2A

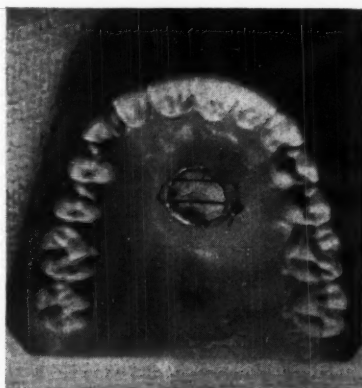


Fig. 2B

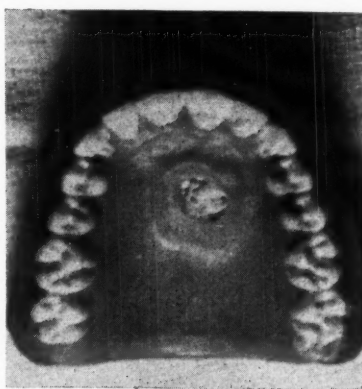


Fig. 2C

Fig. 2—A, Typical incision to drain palatal abscess. B, Excision of pathologic palatal tissue to maintain drainage. Tannic acid dressing sutured in place to control bleeding. C, Surgical dressing in palatal opening to maintain free drainage.

tion and all irregular edges of bone are smoothed.

4. Finally sulfanilamide powder, from 5 to 10 grains, is placed in the bottom of the socket and covered

with a surgical dressing to maintain free drainage and to protect the socket from food particles. Some analgesic value is derived from the dressing.

5. The dressing is changed every three or four days until granulation tissue covers the socket walls.

Infected Sockets—Infected sockets of other teeth are treated in a manner similar to that employed for lower third molars. The appearance of these sockets is one of premature attempt at closure because of too abundant gum tissue which has become invaginated in the empty socket and thus inhibits drainage. Treatment for such infected sockets is as follows:

1. Administer conduction anesthesia to anesthetize the area to be treated.

2. By means of a sharp scalpel excise all invaginated gum tissue from the periphery of the socket to allow free drainage. The incision encircles the socket close to its bony edge to provide the maximum enlargement at the periphery.

3. Remove all debris from the socket, using a curet very gently. Avoid too vigorous use of the curet as infection may be forced deeper into healthy tissue. The curet is used chiefly to remove loose bone particles and necrotic blood from the socket. Keep the field of operation dry by means of sterile gauze. The value of the suction as an aid in removal of debris from the socket cannot be over-emphasized.

4. Irrigate the socket with warm physiologic salt solution or a 50 per cent aqueous solution of urea. The use of an aqueous solution of urea is suggested because of its value in preventing and treating osteomyelitis.

5. Place from 5 to 10 grains of powdered sulfanilamide in the bottom of the socket by means of a sterile spatula followed by a surgical dressing to maintain free drainage. The dressing may be left in place for several days without discomfort, and on removal granulation tissue is often seen. At each subsequent visit replace the dressing with a smaller one, so that granulation tissue is not impeded by too large a pack.

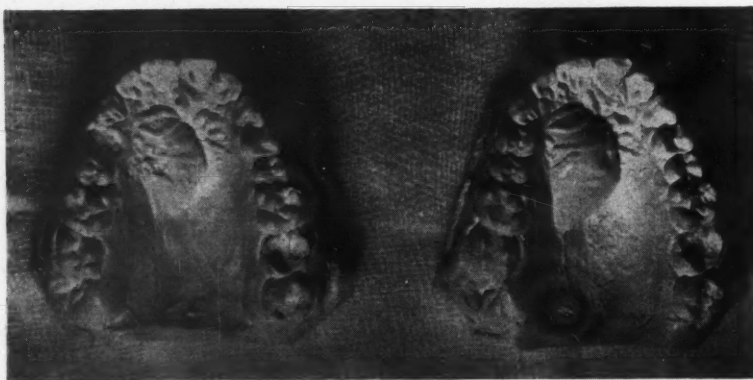


Fig. 3—A, Model showing typical ballooning of a palatal abscess before drainage was secured. B, Collapse of palatal abscess twenty-four hours following excision of a section of pathologic tissue and extraction of first bicuspid.

Infected and painful sockets respond rapidly when the overhanging gum tissue is removed, which by its mechanical action inhibits free drainage and access. This overhanging gum tissue is usually painful to touch, causing the patient discomfort unless removed.

Palatal Abscess—Another location where the open method of surgical treatment is indicated is the palatal abscess which usually occurs in the thin portion of the palate opposite upper lateral incisors, over the bifurcation of first bicuspids or the wide trifurcation of the first molar. It has been our experience that if the abscess is in the palate, it usually originates in one of these teeth. This is due to the thin layer of palatal bone

over the lateral and to the wide spreading of the roots of the first bicuspid and the first molar teeth.

The usual methods of treating palatal abscesses by extraction of the abscessed tooth and incision of the palatal abscess have not proved successful in our hands. Other methods of drainage, in which a single gauze or rubber drain is placed into a single incision made for evacuation of the pus, or a through-and-through drain from the palate to the socket, have not been satisfactory. Many days of waiting for recovery will pass with little or no apparent diminishing of this abscess even with frequent through-and-through irrigation. We have found that it is necessary to excise a great deal of the pathologic soft

tissue that has ballooned out into the palate in order to maintain free drainage. The technique that we have found successful is as follows:

1. After the abscessed tooth is extracted, remove a section of the pathologic tissue in the palate by making a circular incision around the involved palatal soft tissue. Remove this tissue with tissue forceps.

2. Irrigate and place 5 grains of powdered sulfanilamide into the palatal wound.

3. Follow by a tannic acid sponge dressing which is sutured into place to prevent hemorrhage.

4. The tannic acid dressing is removed at the end of forty-eight hours and replaced when necessary by a surgical dressing which is left in place for several days to allow granulation tissue to form. The surgical dressing employed here is made by incorporating sterile cotton fibers with surgical cement. This dressing is placed in the palatal wound and pressed to place by light finger pressure. Cotton fibers adhere to the wound and aid the retention of the dressing. Replace the surgical dressing by a smaller one at each subsequent visit until granulation tissue covers the exposed portion of the hard palate.

Healing is usually uneventful, painless, and of short duration when this procedure is employed.

Dental Division,
Department of Public Welfare.

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Until further notice, THE DENTAL DIGEST will allow \$25.00 toward the cost of illustrations provided by the author of every article accepted for publication.

Before the year is out about 20,000 of our dental colleagues will be in military service. Few of them will have the time, the facilities, or the opportunities to develop new techniques or to write for the dental literature. They will be eager, however, to read of the new developments in dental science and art.

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If you have a constructive idea, an innovation, a new result of tried and proved experiment, put it down in writing, illustrate it, and send the material to: The Editor of THE DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

We hope that you will accept this invitation!

Gradual Adaptation in Increasing Vertical Dimension*

PERLEY J. LESSARD, D.D.S., Portland, Maine

DIGEST

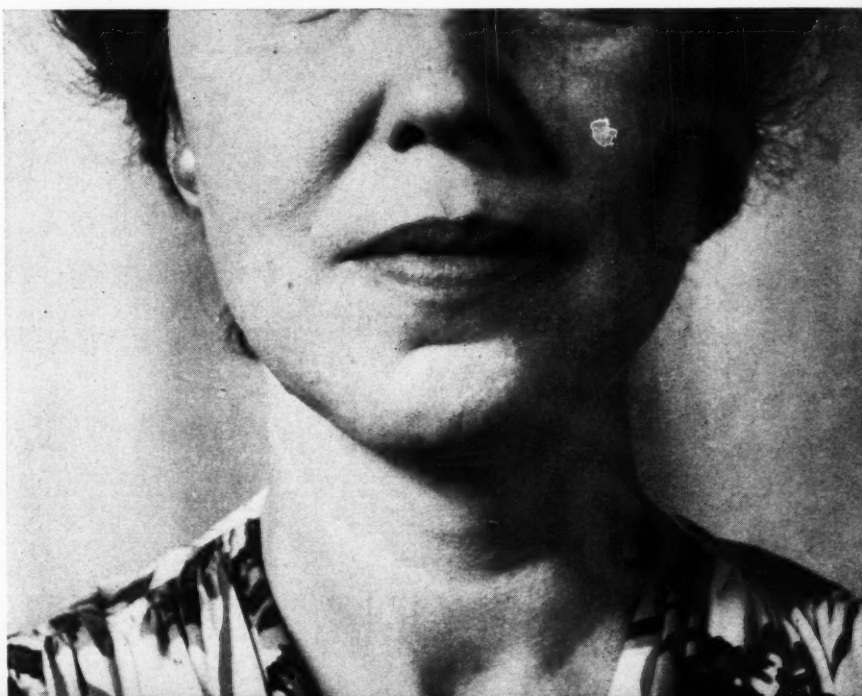
In cases of bite revision the gradual accommodation of the patient to increase in vertical dimension is advocated rather than the immediate construction of a permanent restoration. To accomplish this a temporary appliance is described which is worn before the insertion of the permanent appliance. The techniques are outlined for the construction of both the corrective appliance and the permanent removable cast metal appliance retaining acrylic onlays. A case of bite revision by this method is reported and illustrated.

IT IS MY belief that in all cases of bite revision, a corrective appliance should be worn by the patient before any form of permanent restoration is constructed. Temporary appliances should be made with which patients can gradually accommodate themselves to the increase in vertical dimension. The purpose of such treatment is to improve the tonicity of the muscles and to coordinate the features while the mandible is slowly and gently assuming a new position—by being brought down and forward—in the glenoid fossa, thus initiating healing of the joint structures. The likelihood of securing the correct vertical opening is thus increased greatly. We must realize that there are many pitfalls in the task of bite revision. There is no such thing as "bite opening," but there does exist the possibility of bite restoration to the condition before vertical dimension was lost. Muscles are constant and dominant; when the bite is opened beyond the functionally normal, it will be so



Fig. 1—Patient before treatment. Retrusion of mandible, 10 mm. Lost vertical dimension, approximately 9 mm. Note prominence of lips and excessively deep crease below the lower lip. Lower arch in distal occlusion to normal. Patient, aged 40.

Fig. 2—Two and a half years after treatment was begun; 1½ years after appliance was inserted. Note elimination of depression in chin and increased vertical dimension from tip of chin to base of nose, improving esthetics of facial expression. Malocclusion corrected.



*Presented before the Seventy-Ninth Annual Meeting of the New England Dental Society, Boston, November 19, 1942.



Fig. 3—Before treatment. Teeth in articulation. Note prominence of lower lip; lower teeth hidden from view by uppers.



Fig. 4—Teeth in articulation: 1½ years after appliance was inserted. Note relation of upper and lower teeth. By bringing mandible down and forward lower teeth are in normal relation to uppers, providing efficiency in function and aiding upper and lower lips to maintain normalcy. Malocclusion corrected.

only temporarily, because the muscles of mastication cannot be lengthened or shortened and withstand the strain indefinitely. If strain is applied, the surrounding tissues change in order to help relieve the tension of the

muscles. Usually when the bite is opened beyond normal, the alveolar bone or the apexes of the teeth themselves resorb until the intermaxillary distance is normal again.

When the bite has been brought to

correct opening and the muscles are in perfect correlation, a permanent restoration should be constructed. For this reconstruction I suggest a permanent removable appliance, retaining acrylic resin onlays. It provides the best in esthetics, service, and comfort.

Let us consider a case in which extensive vertical dimension has been lost and there has been some destruction of tissue. Although roentgenograms cannot always be relied on, it is well to have them in order to gain some idea of the abnormality of the temporomandibular articulation. The extent of loss of vertical dimension should be determined before corrective measures are instituted.

Construction of Corrective Appliance

1. Accurate impressions of the upper and lower jaws are taken, either in plaster or one of the colloid materials. The impressions are poured in stone. Bite registrations are taken at this time and models are articulated.

2. Obtain the functional centric relation of the mandible to the maxilla to serve as a guide in surveys and correlated occlusion. To acquire these results a Ballard correlator is later employed.

3. The upper model is tin-foiled (1/1000 gauge) and wrought clasps, one on each side of the arch, are adapted to the most advantageous teeth. The case is waxed to about the thickness of a baseplate; in the palatal area, only up to the necks of the teeth. The heavy metal plate of the correlator is sealed to the palatal portion of the waxed case. Additional strong wax is flowed to the level of metal.

4. The lower model is filled in the lingual depression with soluble plaster flush to the lingual cusps, 1 mm. or 2 mm. of cusp tip being allowed to be exposed.

5. The relation of the upper metal plate to the lower is affixed.

6. The correlator base will make an imprint in the new plaster. After wrought clasps are adapted to the two best available teeth, one on each side of the arch, 1/1000 gauge tin foil is

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burnished over the new plaster and cusps of teeth, and over this is added a layer of 20 gauge casting wax well adjusted to the foil and to the correlator base.

7. The incisal edges and the occlusal of the lower teeth must also be well waxed.

8. A small hole is cut in the wax to allow for positioning of the screw belonging in the correlator base.

9. Wax forms are removed from the models, invested in flasks, and processed in acrylic resin.

10. The appliances carrying the correlating instrument are cleaned, finished, and trimmed to fit the original master model. Only the lingual cusps and incisal tips of the anterior teeth are in contact.

11. The appliances are adjusted to the patient's arches. They must not rock and any unnecessary cusp interference must be eliminated. The screw in the lower arch is raised a few millimeters and locked with sticky wax.

12. The patient is instructed concerning the home use of the appliances. The utmost cooperation must be forthcoming from the patient, as success in these cases depends to a great extent on the attitude of the one being treated. The appliances are to be worn at least twenty minutes a day, the lower jaw describing the lateral and protrusive excursions during this period. The patient is seen once a week and adjustments are made, usually by the turning of the screw upward to increase the vertical dimension, care being exercised so that no intolerable opening is made. The patient slowly adapts himself to the new bite. The time for this corrective treatment varies from one month to a year; the time element depends on the severity of the case.

13. When the corrective treatment has been concluded, positive centric and eccentric relations are recorded as well as the correct opening of the vertical dimension. The degree of opening, that is, the increase in the vertical dimension, is gauged primarily by the extent of the underbite which discloses the retrusion of the mandible. The anterior teeth must also be considered: the extent of wear



Fig. 5—Profile view before treatment. Features distorted by receding chin and lower third of face. Note peculiar tension of facial muscles.



Fig. 6—After treatment and 1½ years after insertion of appliance. Note improvement in facial form and expression and relaxing tension.

on the labial of the lowers and the lingual of the uppers. The protrusive, near edge-to-edge relationship, is observed. This will determine the amount of opening in the posterior regions. With the appliance in the patient's mouth, the screw is adjusted

to the height of the vertical dimension. There must be no cuspal interference at this height when the patient performs right, left, and protrusive excursions.

14. The screw is now locked with sticky wax to preserve the correct

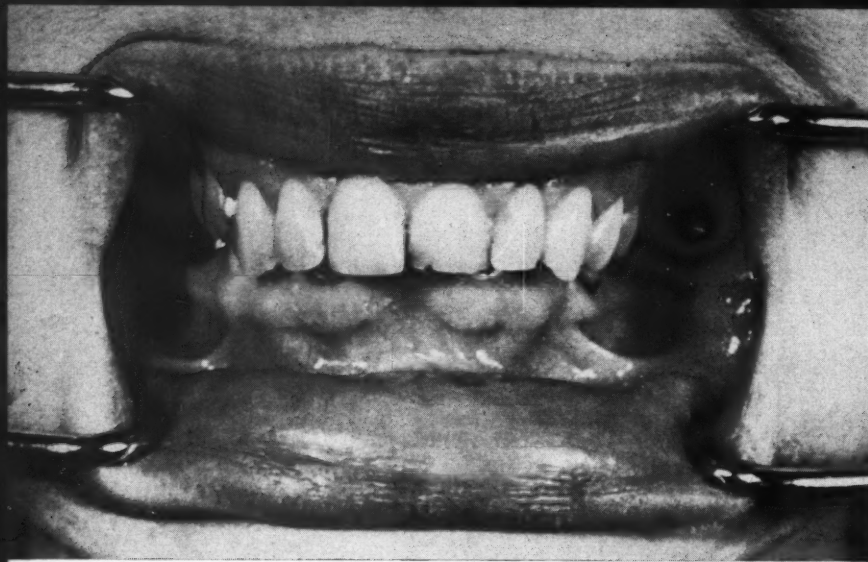
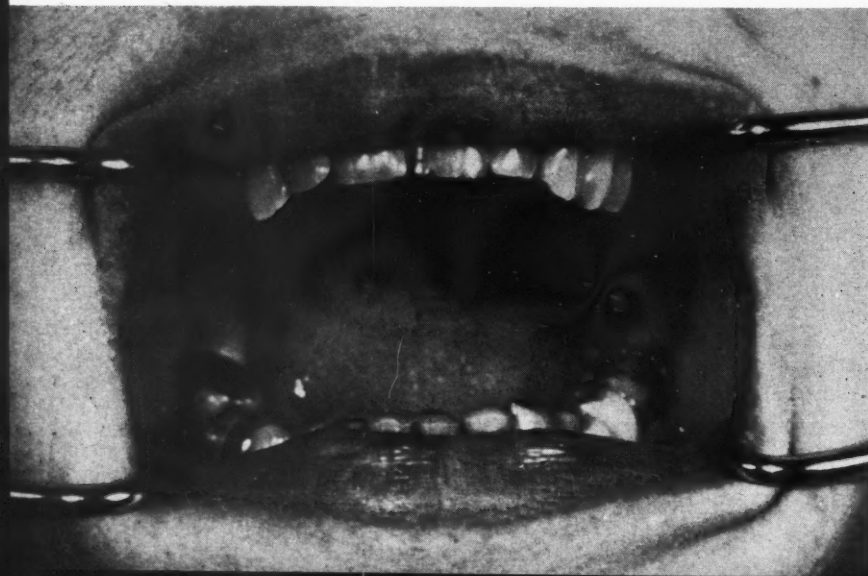


Fig. 7—Mandible in rest space in relation to maxilla. Note distal occlusion. Lower anterior teeth at gingival line show heavy roll of tissue, the result of trauma from upper anteriors.



Fig. 8—Mandible in rest space in relation to maxilla, after treatment and 1½ years since insertion of appliance. Note improvement vertically; tissues around gingival of lowers are normal.

Fig. 9—Mandible in opening position, showing great loss of vertical dimension. Lower teeth show a lingual incline. Lower right first permanent molar is missing.



opening index, and is then removed.

15. The screw with the spring in it is inserted in place of the removed screw. It is opened, so that the patient can close and compress the spring without contacting cusps. The patient is instructed to close and apply pressure to the limit of spring tension and hold this position between five and ten minutes. By doing this the muscles of function are fatigued and the correct antero-posterior relationship of the lower arch to the upper is established and correct functional centric relationship is given.

16. The screw with the spring in it is now removed and replaced by the screw and the hard wax marking and adjusted to its original position.

17. The Gothic arch tracings must be registered. This is done by placing a film of carding wax over the plate on the upper appliance. The patient is instructed to close and give a Gothic arch tracing. The upper is removed, and a little hole the size of the point of the screw is drilled two-thirds through the plate at the apex of the Gothic arch tracing, a round bur being used. This allows a little further closing, and the screw must be readjusted to compensate for this slight difference from the original. The Gothic arch is now at the desired opening.

18. Prepare for plaster indexes by placing a small quantity of mixed plaster on the posterior teeth of the lowers.

19. The upper teeth are lubricated with mineral oil and the patient is instructed to close until the point of the screw rests in the prepared hole.

20. After the plaster has set, the patient is made to open his mouth, and the lower appliance is removed with the plaster index.

21. These registrations are now transferred to the master models, and the case is articulated according to the index relationship.

Constructing of Removable Acrylic Appliance

We are now ready to construct a permanent metal splint retaining acrylic resin onlays for the lower arch.

1. A skeleton frame is cast of gold

or any base metal. (I prefer the cobalt chromium alloy, vitallium, as it is light, strong and comparatively inexpensive.)

2. The skeleton frame is held in position by clasps on the bicusps and molars: two clasps on each side of the arch.

3. The lower posterior teeth are tin-foiled and the retention frame is adjusted over the tin-foiled teeth.

4. Colorless wax is flowed over the tin foil.

5. The articulating machine is made to duplicate all movements of the patient's jaws according to registrations.

6. Wax is carved according to the relationship to the upper teeth. The greatest amount of contact points in centric should be sought for, but right and left lateral excursions should be free of cuspal interference.

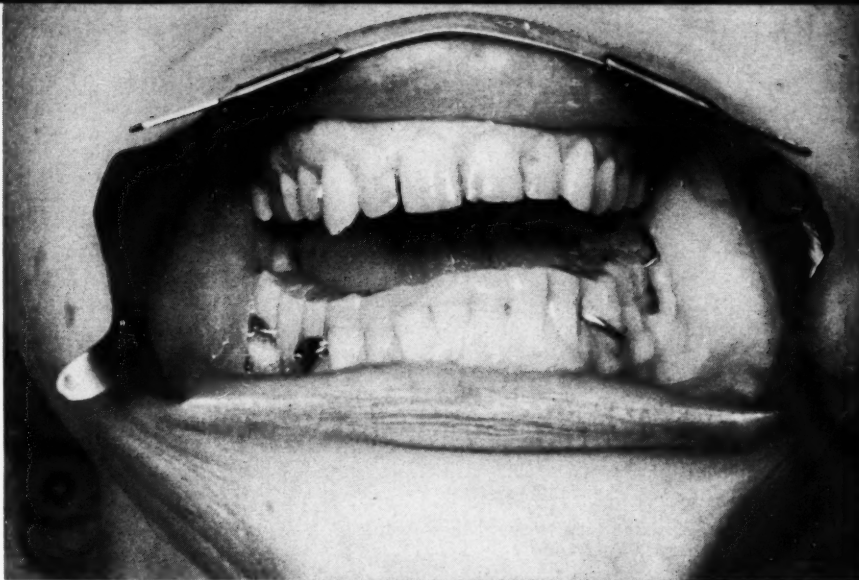


Fig. 10—Mandible in opening position 2½ years after treatment was instituted; 1½ years after appliance was inserted. Vertical dimension restored to normal. Cast acrylic cusps or onlays on lower teeth have a correct incline (vertical), resulting in correct balanced occlusion with the uppers. By using cast acrylic cusps, a harder substance is had; cuspal interdigitation is established; three dimensional occlusion is thus had. Note restoration of right first permanent molar.

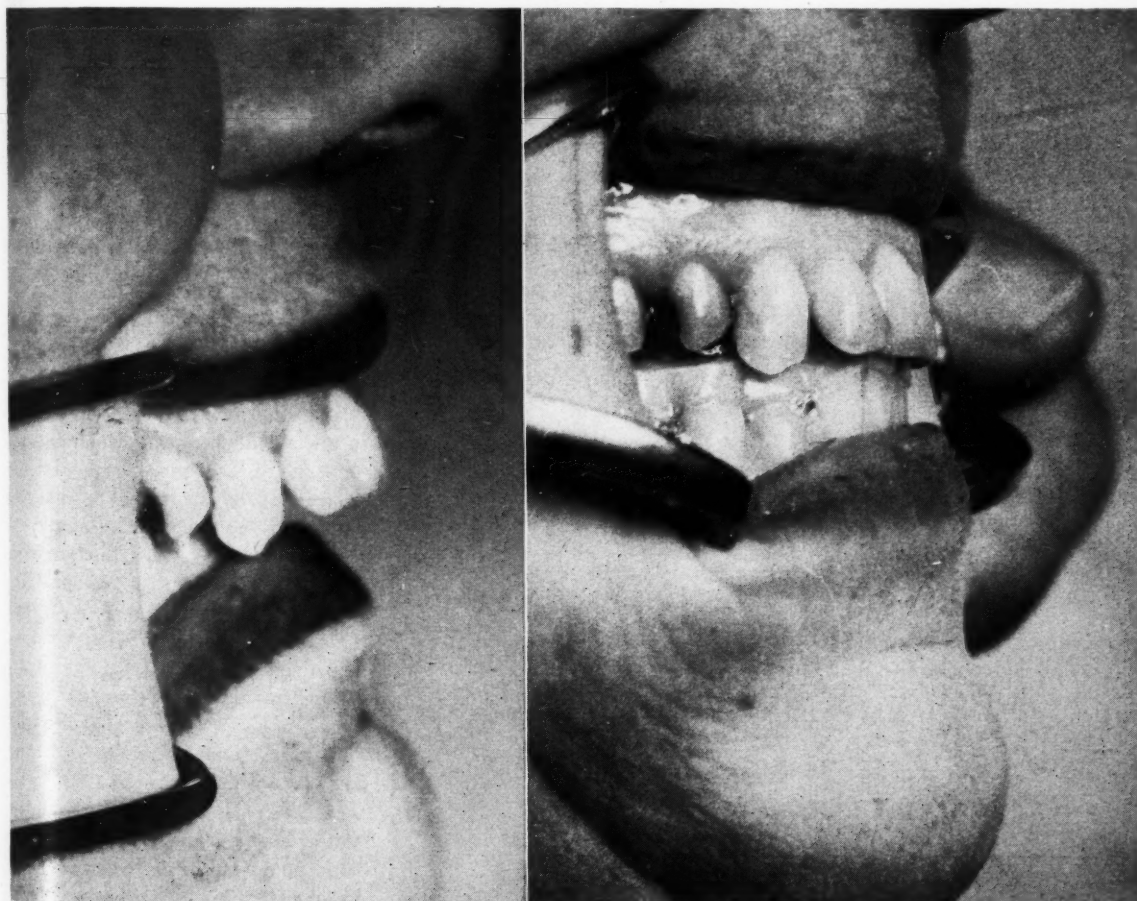


Fig. 11 (left)—Lateral view of teeth in articulation before treatment. Note retrusion of mandible and position of lower anteriors (below maxillary rugae).

Fig. 12 (right)—Lateral view of teeth in articulation after treatment. Note normal position of mandible and teeth.

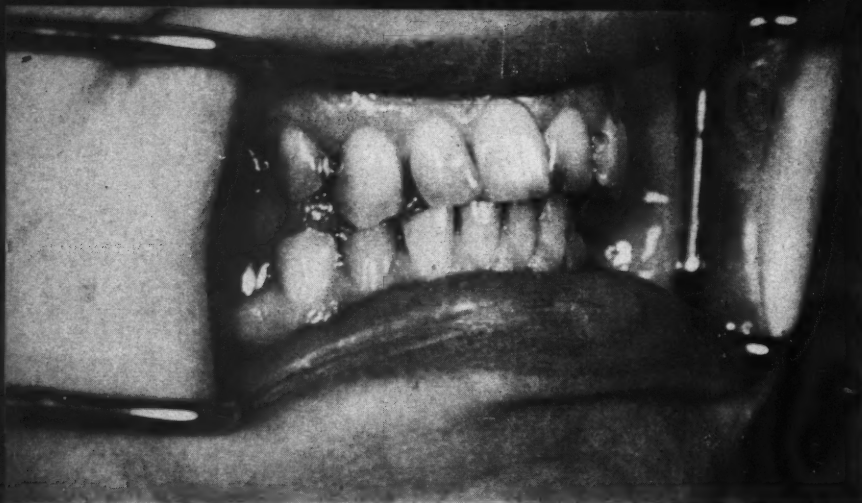


Fig. 13—Before treatment. Mandible in maximum protrusion (showing extent of reconstruction needed to be made).

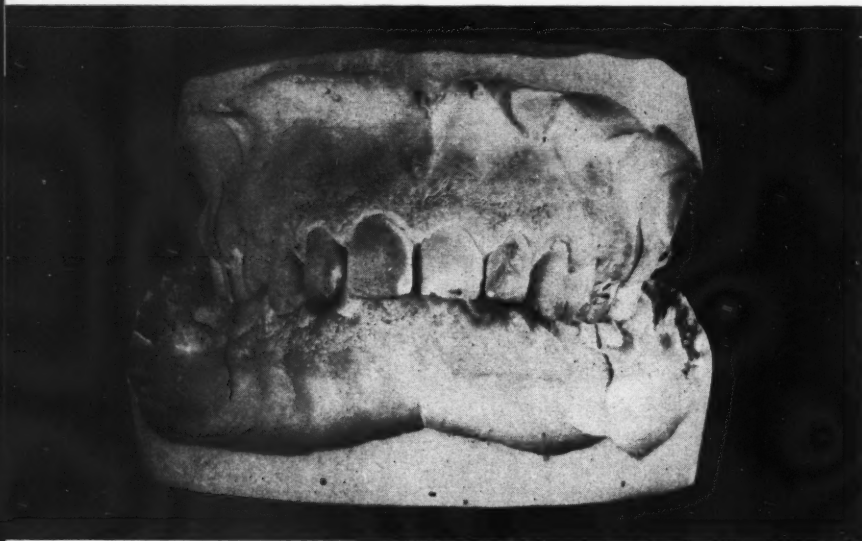


Fig. 14—Stone casts showing retrusion of mandible and lost vertical dimensions.



Fig. 15—Stone casts, lateral view, showing retrusion of mandible, loss of vertical dimension.

7. When correct occlusion has been gained, the wax surface of lower metal appliance is changed to acrylic resin. The injector or casting technique is employed in processing the plastic material. This technique removes all mold shrinkage and assures the maximum in density. Hardness and strength are increased, particularly if smaller mesh particle sizes of acrylic resins are employed.

8. After the appliance is completed, it is tried in the mouth. With carbon paper it is carefully marked and checked for right and left lateral excursions. Handpiece grinding of the occlusion is now done to improve contact. A little grinding paste is placed on the occlusal and the patient is instructed to chew on it for a few minutes, thus removing minute interference from the opposing natural teeth and supplying a better balanced functional occlusion.

Report of Case

History—A woman, aged 40, required improvement in appearance primarily, although the patient complained of impaired hearing and sensitive teeth and gums (Figs. 1, 3, 5, 7). There was no family history of a similar condition.

Examination—The patient had lost the lower right first molar years previously (Figs. 9 and 15); subsequently attrition had set in in the posterior teeth. A deep overbite was present (Figs. 3, 11 and 15), and the lower anterior teeth functioned only in the singulum area of the upper anteriors (Figs. 7 and 14). Facial dimensions were shortened, so that the lower lip was excessively prominent (Figs. 1 and 3). Facial expression was distorted (Figs. 1 and 3). Retrusion of the mandible was 10 mm. (Fig. 5), and lost vertical dimension, approximately 9 mm. (Fig. 5). Roentgenograms indicated that the condylar heads were deeper in the glenoid fossae than normal. The meniscus was virtually worn out.

Etiology—It was evident that the initial factor leading to the present condition was the loss of the right lower molar in early life, aggravated by the ensuing attrition, neglect, and poor dentistry.

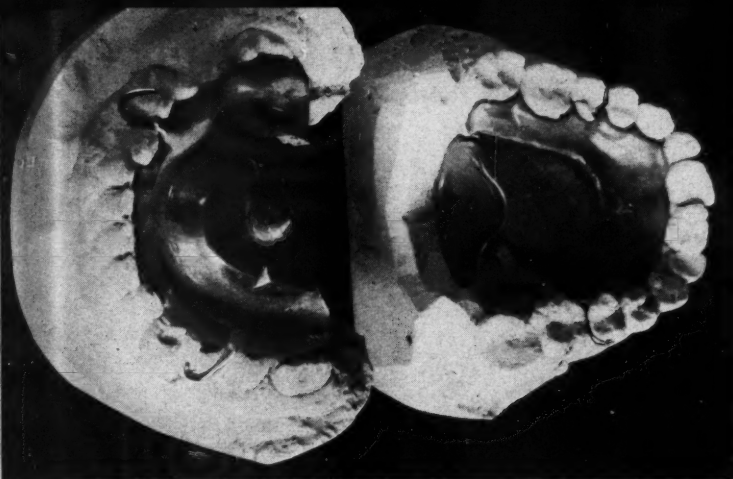


Fig. 16—Correlator instruments, used as corrective appliances and also to determine centric relation and Gothic arch. Patient wore these appliances twenty minutes a day for one year.



Fig. 17—Upper and lower casts in centric relation with wax bite in position.

Fig. 18—Removable cast metal appliance retaining acrylic onlays.

Fig. 19—Cast metal appliance with acrylic onlays on model.

Treatment—A lower cast metal framework carrying acrylic onlays (Figs. 10, 18, 19, and 20) was constructed after the patient had worn upper and lower corrective appliances (Fig. 16) at least twenty minutes a day for one year. The patient, while wearing corrective appliances exercised the jaws as prescribed.

Postoperative Result—After the permanent appliance had been worn a short time, the slight deafness disappeared, and trauma of the teeth subsided. The esthetic result was as desired and it has had a beneficial effect on the patient. The appliance has been worn with comfort, consistently except for cleansing, for more than two years. There is no marked abrasion of the plastic onlays (Figs. 2, 4, 6, 8, 10, 12).

Comments

The removable cast metal appliance retaining acrylic onlays has evident advantages over the fixed appliance:

1. It does not require cutting into natural teeth.
2. By using acrylic resin onlays there is decreased impact shock and no abrasion, thus protecting the alveolar process, periodontal membrane, and opposing teeth.
3. Acrylic onlays establish greater cuspal interdigitation.
4. The patient wears a light, com-



Fig. 18 ↑

Fig. 19 ↓



fortable appliance. If the need arises for its removal for any reason (cleaning, rest, repair) removal is easy.

5. Acrylic onlays constructed according to the technique outlined will wear indefinitely. If, however, attrition is noticed and it is considered advisable to add more acrylic, this can be done in a few hours.

Innumerable failures in bite revision have been noted in which permanent gold crowns or onlays were used on the posterior teeth and jackets on the anteriors. Without a doubt the bite was opened to an intolerable degree in such cases and failure was inevitable.

51 Deering Street.

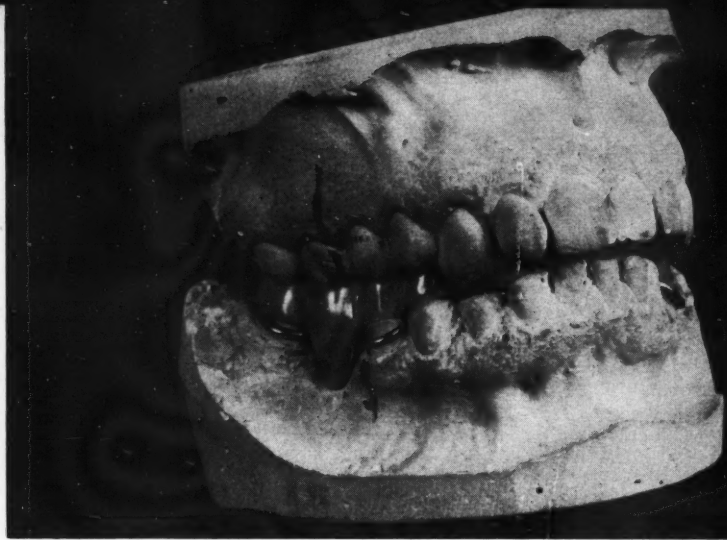


Fig. 20—Appliance in position. Upper and lower jaws in balanced centric occlusion.

A Method of Local Treatment for Ulcerative Gingivitis

(An Abstract)

[From the British Dental Journal, 75:61 (August 6) 1943. By Captain M. Glickman, L.D.S.I., The Army Dental Corps]

WHEN TREATING ulcerative gingivitis the aim is: (1) removal of all stagnation from the teeth and mouth, particularly grease which provides a condition of anaerobiosis; (2) destruction of anaerobic bacteria and neutralization of the products of their activity; (3) stimulation of granulation tissue and healing of the ulcerations; and (4) encouragement of epithelialization and keratinization of mucous membrane and prevention of relapse.

These objectives are achieved (1) by avoiding the use of oxidizing agents that are escharotic; (2) by using oxidizing agents that are slightly alkaline in reaction; and (3) by ensuring that oxidation takes place slowly and continuously at the site of infection or the bottom of pockets; the oxygen formed should be retained on the tissues as near as possible to the anaerobic bacteria where it is most needed.

The bacteriologic evidence shows that fatty stagnation, often associated with communal feeding, such as in Service groups where stews and fatty gravies are commonly used, provides a medium for the development and increased virulence of anaerobic bacteria which are found in ulcerative

gingivitis. I regard this stagnation as the responsible factor, and failure to remove it, coupled with incorrect oxygenation, as the cause of the chronic condition.

Treatment

The treatment that I have evolved is based on the removal of this stagnation and correct oxygenation. A combination of soap and hydrogen dioxide is used. The soap removes stagnation products, particularly fats, and lowers surface tension, thus allowing the alkalized hydrogen dioxide to penetrate the depth of pockets where it slowly and continuously gives up its oxygen which is retained on the tissues as near as possible to the anaerobic bacteria, which are destroyed. The alkalinity of this combination neutralizes the acids present in the lesions and so prevents further necrosis; affords relief of pain, and stimulates granulation tissue and healing of the ulcerations. There is no injury to tissue and the resulting keratinization of the mucous membrane minimizes the danger of relapse.

Technique of Treatment

First Visit—The patient is inform-

ed that he is responsible for part of the treatment and that home treatment is essential. The making of a mouthwash is demonstrated by placing a piece of soap in a tumbler of warm water and shaking it up until a lather is formed. A lather is essential. To one tablespoon of this is added one tablespoon of 10 volumes hydrogen dioxide. This is referred to as the mouthwash.

The patient is shown the gross debris usually present on the gums and in the interdental spaces and is instructed how he can help to remove this by swabbing his gums with cotton wool soaked in the mouthwash. This is done by the patient at this visit and he is instructed to pump the mouthwash vigorously between his teeth for at least two minutes.

1. The debris and loose necrotic tissue should be removed from the interdental spaces as carefully as possible with a scaler and the pockets and interdental spaces sprayed with the mouthwash.

2. Soap powder is introduced into the pockets with a moistened blunt probe and then a swab of cotton wool, moistened in the mouthwash, is dipped into the soap powder, deposited

(Continued on page 451)

The Editor's Page

IN MECHANIZED war the skills of all citizens are put to work. Dentists are called on to give service to fighting men under every conceivable condition of warfare. Other dentists have diverted their skills and made contributions not strictly in the field of dental techniques. Bulbulian, a dentist on the staff of the Mayo Clinic, is a co-inventor of the oxygen mask used by aviators. Willhelmy, a civilian dentist, has made contributions to the literature pointing out that overclosure of the jaws may cause stenosis of the eustachian tube and bring disaster to flyers in rapid descent. Recently three Naval dental officers¹ have designed a mouthpiece for oral respiration in low and high barometric breathing. This device is designed to be of aid to sailors in a submarine trapped below the water surface who must use a Momsen, or escape lung to reach the surface. Hitherto Naval personnel with any missing teeth or edentulous mouths could not be accepted for submarine duty. These men were rejected because of their inability to use the rubber mouthpiece of the escape lung. By redesigning the mouthpiece to permit effective use by edentulous or partly dentulous persons, many otherwise well qualified persons will be made available for submarine duty.

The mouthpiece in use since 1929, when the Momsen lung was constructed, had two rubber lugs that were gripped between the wearer's teeth and two vertical fins that formed a groove enclosing the upper and lower lips of the wearer. Sailors with good teeth and a favorable bite did not experience difficulty in manipulating this apparatus. If, however, dental conditions were not favorable, the wearer could not use the escape lung with security for oral respiration. The designers of the new mouthpiece describe the appliance as follows:

"The modified rubber mouthpiece contains a gum block which fits over the edentulous ridges and replaces the two lugs. The gum block is grooved in such a way as to facilitate seating over the edentulous ridges. The rubber used for the modified mouthpiece is flexible enough to allow for compression and accurate fitting of the gum blocks over practically all edentulous ridges regardless of the intermaxillary distance or width and shape of the alveolar ridges. Its flexibility also al-

lows its use by personnel with a full complement of teeth. Thus the mouthpiece may be used by personnel with any combination of teeth missing and present between these extremes . . .

"An average arch form was used in shaping the gum blocks and an approach to the average intermaxillary distance (16 mm. to 20 mm.) was chosen as the thickness of the rubber between the maxillary and the mandibular ridges. The vertical flanges were placed to guide the gum block to proper seating on the alveolar ridges or dental arches, and help to prevent its displacement.

"Theoretically the mouthpiece should also be instrumental in equalizing pressures via the eustachian tube and in that way help prevent damage to the tympanic membrane. Further experimentation will have to be conducted to determine whether the increase of intermaxillary distance, occasioned by the use of the mouthpiece in routine high and low pressure breathing, is sufficient to keep the eustachian tube opening from becoming closed by decrease in intermaxillary distance and muscle tension while teeth are in normal occlusion. One serious objection, however, is the interference with speech in communication while the appliance is worn."

This mechanical refinement may seem to be a small matter when we consider the total war. It is not an inconsequential contribution, however, when we consider that this apparatus may be the means of saving the lives of men who are trapped in submarines. It is not inconsequential when we consider that it permits personnel who are otherwise qualified to be accepted for submarine duty—personnel, who without this device could not qualify because they fail to meet the dental requisites.

The mechanical contributions developed for the demands of war are frequently carried over into the times of peace. We can be certain that the reconstruction period that lies ahead will include not only the reconstruction of damaged cities and devastated countries but also the reconstruction of human values. Dentistry will have a large task in reconstructing mutilated human faces and restoring to dental health the thousands of people who suffer from lack of dental care in wartime. Many of the mechanical refinements and innovations which will help in this human restoration are now in the making.

¹Pitton, R. D.; Schlack, C. A., and Restarski, J. S.: Double-Grooved Mouthpiece for Oral Respiration in Low and High Barometric Breathing. U. S. Nav. Med. Bul. 41:1420 (September) 1943.

Odontomas*

PAUL B. BASS, Ph.G., D.D.S., Chicago

DIGEST

There is too much confusion in the consideration of odontomas. Three different groups are described in this article, and this division is made with reference to their anatomic derivation. Altogether five different tumors are described and the names given will designate them according to their histologic composition.

Numerous other tumors or growths are described in the literature as odontomas. Some of these are not true odontomas; others fall readily into one of the five types listed in the classification given here. A thorough knowledge of histology and pathology is necessary to a proper naming and classifying of odontomas.

Definition

A TUMOR or neoplasm¹ is a new growth of cells which proliferates without control, serves no useful function, and has no definite termination. An odontoma² is a rare benign tumor arising from the special cells concerned with tooth development. There is confusion in the literature regarding classification of odontomas. This is due to lack of a uniform definition of terms. In order to be considered a true odontoma, a growth must satisfy both the definition of a tumor and that of an odontoma. Enamel nodules or pearls are included in most lists of odontomas but they do not truly belong there. They have a definite growth limit and pattern which

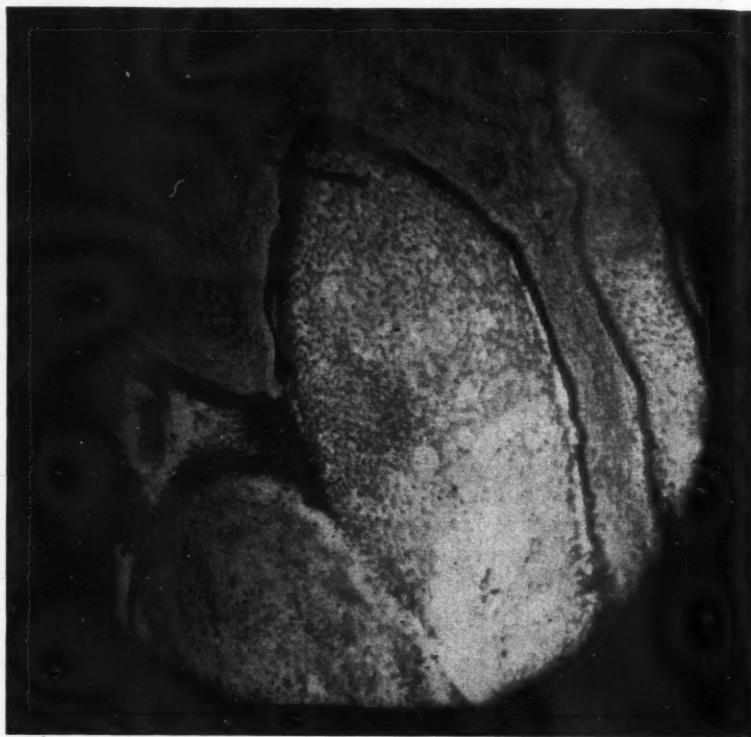


Fig. 1—Ameloblastoma. Microphotograph showing peripheral layer of ameloblasts with stellate cells in center.

are dependent on the ameloblasts from which they originate. A supernumerary tooth, likewise, is not an odontoma, because it does not answer the definition of a tumor. It does not proliferate without control nor have an indefinite termination. On the other hand, a dental cyst might be classified as an odontoma, because it is a tumor arising from the dental epithelium which proliferates without control, serves no useful function, and has no definite termination; however, the term "cyst" has come to have a particular meaning and to describe a definite histologic entity and this meaning will probably be preserved.

In 1869 Broca³ first classified odontomas as a special group of related tumors. His classification was based on their common physical char-

acteristics. Bland-Sutton was the first to classify them according to their anatomic derivation. This classification is comprehensive but may prove to be confusing to later students of dental histology who define the dental follicle as the sac that encloses the other elements of the tooth germ. Bland-Sutton regarded it as the enamel organ plus the dental papilla, and hence, the terms "compound follicular odontoma" and "follicular cyst" which he used may serve only to name rather than to define. Every good subsequent classification of odontomas has been based on the work of Bland-Sutton, and this article uses his work as a starting point.

A committee appointed by the British Dental Association in 1914 made an exhaustive study of the subject and published a book containing their observations. This report was

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¹Boyd, William: A Textbook of Pathology, Edition 3, Philadelphia, Lea & Febiger, 1938.

²Committee Report: Odontomes, British Dental Assoc., 1914.

³Moorehead, F. B. and Dewey, K. W.: Pathology of the Mouth, Philadelphia, W. B. Saunders Company, 1925.

made in great detail and is of value, but deletion and simplification would increase its value considerably. The nomenclature and a great deal of the written description of odontomas contained herein are taken from this report.

Etiology

Odontomas occur as the result of an aberration in the tooth germ during development. They present great morphologic abnormality as a result of an upset in one or more of the physiologic stages of tooth development. The special cells concerned with tooth development are those contained in the enamel organ, the dental papilla, the dental follicle, and Hertwig's epithelial sheath. To this list might be added the cells of the oral epithelium which form the dental lamina in the first stage of tooth formation. Definitions of these terms may be made in a concise and exact manner as a result of the great progress made in the study of dental histology in the last twenty years.

Physiologic Periods in Tooth Development

In order to understand how and when these tumors are formed, we must have a clear understanding of the various physiologic periods in tooth development. Schour⁴ defines these stages as: (1) initiation; (2) proliferation; (3) histo-differentiation; (4) morpho-differentiation; (5) apposition, and (6) calcification. In considering the over-all picture of tooth development, it should be realized that each of these stages is not a distinctly separate division and that one is dependent on the other. We know that cell division and cell function are not possible at the same time, so that if proliferation continues beyond the normal, histo-differentiation will show a corresponding decrease. These facts should help us to correlate the morphologic with the physiologic development of the tooth and to understand the results of the aberration. If something happens to prolong proliferation at the period

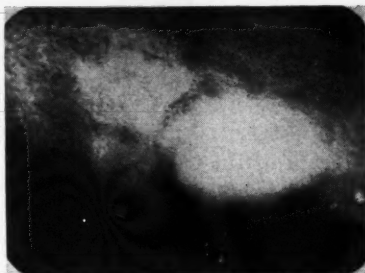


Fig. 2—Roentgenogram showing complex composite odontoma.

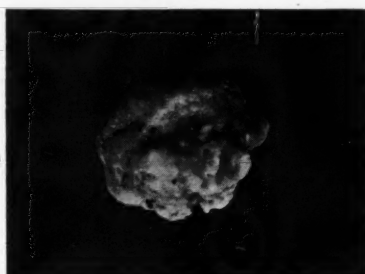


Fig. 3—Photograph of tumor after removal.



Fig. 4—Contained tooth and denticles from compound composite odontoma.

of morpho-differentiation, it might be assumed that an ameloblastoma may result from the wild growth of these cells.

Classification of Odontomas

Odontomas may be classified as follows:

1. *Epithelial Odontomas*—Epithelial odontomas are a result of an aberration in the enamel organ. They may be (a) ameloblastomas, otherwise known as adamantinomas, multilocular cysts, or cystic adamantinomas; (b) dentigerous cysts, otherwise known as follicular cysts.

2. *Composite Odontomas*—Composite odontomas are derived from an aberration in the development of the epithelium, primarily; and secondarily, in other parts of the tooth germ.

There are (a) complex composite odontomas; (b) compound composite odontomas, which are also known as compound follicular odontomas.

3. Connective Tissue Odontomas—

Connective tissue odontomas are derived from abnormal development in dental tissues of mesoblastic origin. These are (a) cementomas and (b) fibrous or soft odontomas.

Ameloblastomas

Etiology—An ameloblastoma is an innocent tumor arising from the dental epithelium with the formation of numerous cystic cavities. It is frequently called an "adamantinoma" or "multilocular cyst," but ameloblastoma is a more descriptive name. Some believe that ameloblastomas possess malignant properties. This is because the ameloblastomas grow by forming new cystic extensions which some investigators consider as evidence of the burrowing seen in the basal cell carcinoma. Most observers regard ameloblastomas as benign, however, and point out that the enlargement is merely by expansion and pressure rather than by actual invasion of the surrounding tissues.

Ameloblastomas have been found in regions foreign to the oral cavity and may be explained by metaplasia of the tissue during development of the fetus. The tumor may at first be mistaken for an ordinary dental cyst, but further growth reveals its true nature.

Characteristics—As the growth enlarges, pain may result owing to pressure on surrounding structures. The outline becomes irregular as a result of the pressure within the various cystic cavities. The teeth may loosen and fall out when the size increases. An opening into the oral cavity may be caused by this loss of teeth or by rupture from contact with an opposing tooth.

Histology—The histologic structures present a variety of conditions depending on the size of the tumor and the site from which the section was cut. The early appearance is more of the solid type of tumor with small or no cavities and the cystic spaces undeveloped. Papilliferous projec-

⁴Noyes, F. B.; Schour, Isaac; and Noyes, H. J.: *Dental Histology and Embryology*, Edition 5, Philadelphia, Lea & Febiger, 1938.

tions of epithelium cause this filled-in appearance. As the cyst grows, the cavities become larger owing to growth or a combination of two or more of the cavities. The early walls or septums show connective tissue and some trabeculae of bone. Later the walls are greatly thinned out and may have only one lining layer of epithelium. Masses of epithelial cells appear which may show central degeneration. The cells are largely spheroidal but may be columnar. In some areas, the arrangement and morphology of the cells may approximate that of the enamel organ with the stellate reticulum clearly shown. The contents of the cavities appear as a serous brown or a white glutinous colloid. When growth is massive, the contents may appear only as debris.

Occurrence—Ameloblastomas occur about twice as often in women as in men, and they are usually found in the molar region of the mandible. Diagnosis is generally not made early because of the lack of symptoms of pain and swelling. Ameloblastomas frequently recur if all the cystic cavities are not removed.

Treatment—Treatment consists in early complete surgical removal. Deformity may be caused if the growth attains a great size, so that a large part of the mandibular structure may have to be removed.

Dentigerous Cysts

A dentigerous cyst is an innocent tumor arising from the dental epithelium and connected with an unerupted tooth. These arise at about the time for the normal eruption of a tooth and are considered by some to be the result of the unsuccessful attempt at eruption. The outer enamel epithelium proliferates and central degeneration and liquefaction occur.

A fibrous tissue capsule or membrane surrounds this growth and may vary greatly in thickness. The contained fluid is viscid and degenerating epithelial cells and cholesterol have been found in it. The tooth involved may be fully or partly formed. Sometimes the crown of the tooth may be seen inside the cyst when it is opened. The root is generally external to the cyst. This tumor occurs about equally in both sexes and most frequently around molars or cuspids. Removal of the cyst and tooth comprises the treatment.

Composite Odontomas

Composite odontomas are calcified tumors consisting of a disorganized conglomeration of enamel, dentine, and cementum, or, at least two of these elements. They arise from the whole tooth germ. This class includes all the hard odontomas except the cementomas. They usually cause no symptoms and are sometimes exfoliated.

Composite odontomas may be divided into two subdivisions, although this group usually contains about six different types of tumors in other classifications.

Complex Composite Odontomas

Complex composite odontomas are those which have all the tissues mixed indiscriminately and have no definite shape. They vary in size from a few grains to several ounces. There is no definite morphologic resemblance to a tooth. The surface varies considerably and may be smooth or irregular with many pits, depending on the particular substance present in that area.

Enamel always occurs in relationship to dentine and sometimes spaces are found which are lined by enamel

and surrounded by dentine. There is a great deal of interglobular dentine and many vascular canals. Occasionally there are symptoms of uneasiness, neuralgia, and tenderness owing to pressure. Complex composite odontomas sometimes become infected, and the growth may be exfoliated through the fistula.

Compound composite odontomas are tumors containing several calcified masses of tissue of dental origin. These tumors are called compound follicular odontomas in Bland-Sutton's classification. The number of the calcified masses may vary from two to several hundred. They appear in youth or early adulthood and frequently cause inflammation. These may be formed by deformity of several normal tooth germs, by the non-union of component growth centers of one compound tooth, or by the irregular growth and sporadic calcification of one tooth germ.

Connective tissue odontomas are derived from the dental follicle. Fibrous odontomas are described² as consisting primarily of an overgrowth of the fibrous tissue of the dental sac and occurring only in patients who have had rickets.

Cementomas are connective tissue tumors derived from the dental follicle and composed of cementum. They may be a later stage of the soft or fibrous odontoma. They differ from hypercementosis in that they are more vascular and do not show the regularity of lamina formation.

Other composite odontomas are described and given special names because of their peculiarities of shape. These tumors, however, fall readily into the group of complex composite odontomas, and thus simplify the study.

808 South Wood Street.

Unsolicited Manuscripts Are Welcome

*"When you have made an observation of value or reached a conclusion concerning the unusual, publish it. Avoid carrying unpublished knowledge to the grave!"—
Sir William Osler.*

Packing Acrylic Dentures

FRED A. SLACK, JR., D.D.S. and E. H. SMITH, D.D.S., Philadelphia

DIGEST

A recognition of the three main physical states of the powder and liquid mix is important for successful denture packing. These physical states are (1) sandiness; (2) tackiness; (3) stiffness.

An understanding of the three reactions taking place during those three physical states is equally important. These reactions are (1) softening of the particles; (2) thickening of the liquid from dissolving of surface particles; (3) thickening of liquid from initial polymerization.

A division of the plastic mass before packing is advanced as an improved step in acrylic denture packing.

BECAUSE OF the simplicity of packing acrylic dentures, further possibilities in this direction have been largely overlooked. It seems reasonable to take a measured amount of powder; add a measured amount of liquid;

stir the two together; let the mixture stand in a closed jar for a certain length of time; then, pack the case. This procedure has not been unsuccessful; but improvements would be advantageous. It has been contended heretofore that the drier the mix, the less shrinkage and less contraction there will be during polymerization. The cake form, also, has been advocated in preference to the powder and liquid mix. We believe that the foregoing is not sufficient to insure good packing.

Three Physical Stages

After the polymer has been completely saturated with the monomer, spatulation or stirring or some other form of manipulation should be utilized. Three stages will be noted:

1. The first stage is one of sandiness, at which time the material feels crunchy and not smooth.
2. The second stage is one of tackiness or stickiness and smoothness. When the spatula is withdrawn from the mass, little cobweb-like strands form.
3. The third stage is one of smooth stiffness. At this time no cobweb-like strands form, and the mass tends to

stick together rather than to the spatula or to the slab or jar.

Packing is done in the third stage. The stiffness of the material permits enough compression inside the mold to eliminate the contraction caused by shrinkage during polymerization (Fig. 1).

It is emphasized that the packing should be done before a fourth stage is reached, which might be termed the hardening stage.

Adequate Liquid

If only enough liquid is applied to the denture powder to make the powder moist, there is the danger that some particles will not be sufficiently wet and that other particles, although moist, will not have enough liquid to penetrate to the interior, especially inasmuch as neither metal molds nor extreme pressure or heat are utilized.

Enough liquid should be incorporated into the powder to insure complete wetting of each particle. This does not necessarily mean a softer mass for packing, because the mix should be left standing until the same degree of stiffness occurs as would be had with less liquid. If the waiting

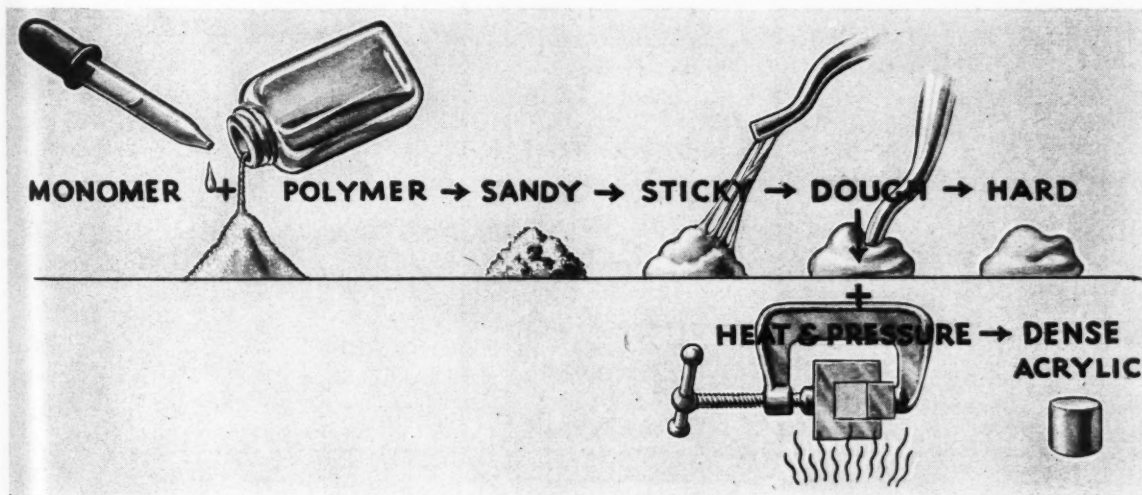


Fig. 1—Physical stages of polymer and monomer mix.

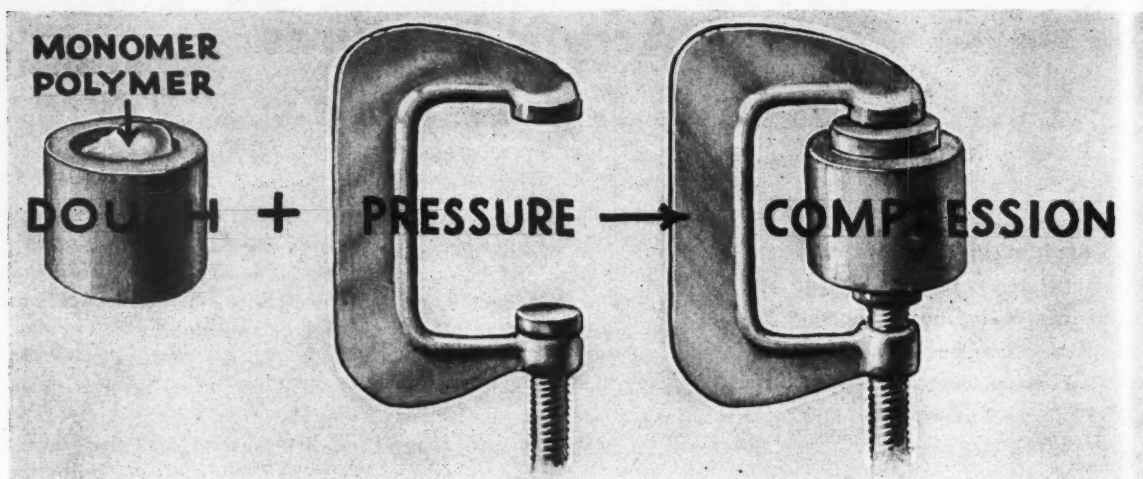


Fig. 2—Pressure on the monomer-polymer dough should yield proper compression.

time is longer than is considered desirable, it can be hastened by mild heat, somewhat under 100° F. It is necessary that the dough, powder and liquid plastic mass, should become of a stiff consistency, primarily to insure resistance in closing the flask, which in itself creates the pressures necessary for good molding (Fig. 2).

Three Reactions

Three reactions take place during a powder and liquid mix:

1. Liquid penetration involves, not

de-polymerization, but a softening of particles.

2. The liquid is a plasticizer and solvent for the particle, so that the surface of the particle becomes slightly dissolved into the liquid. This causes the liquid to thicken.

3. The liquid itself becomes thickened, not only because of the dissolving of the surface of the particle but also because the liquid itself starts to polymerize.

These three reactions, taking place simultaneously, cause the initially

sandy mass to become softer and stiffer. This action should take place in a closed jar, for evaporation should be no part of the action. It is suggested that should the mass become dry or form a crust a few drops of liquid may be added, either directly to the mass or into the jar. This will decrease the unavoidable slight surface evaporation. The end-result of a stiff mass of polymer particles thoroughly saturated by the monomer is superior to the stiff mass obtained by only a minimum amount of monomer. It is

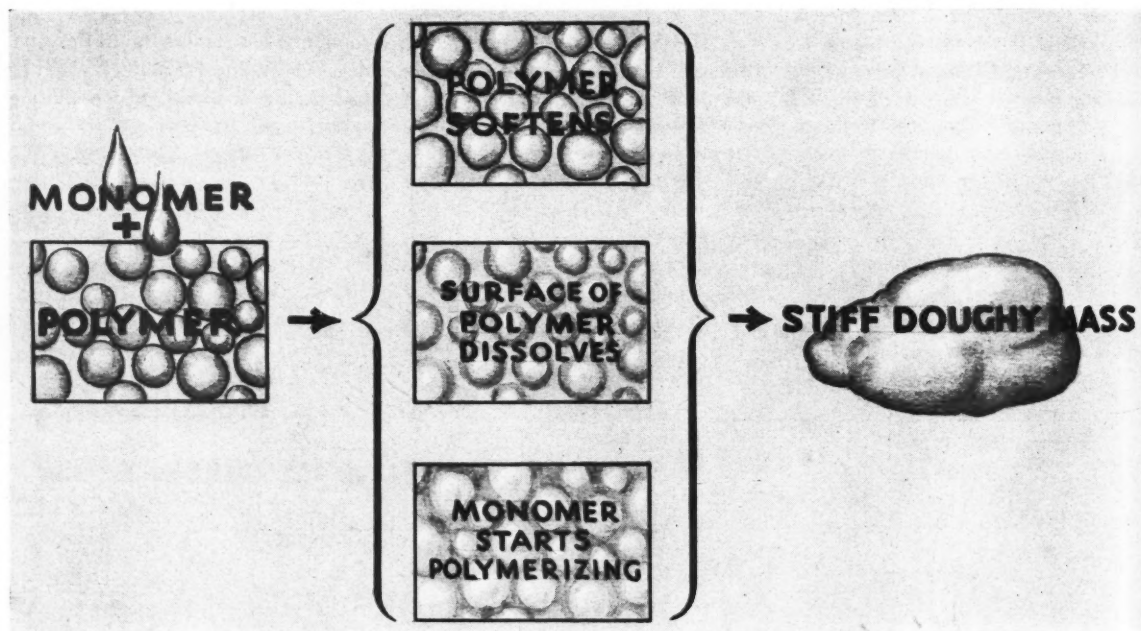


Fig. 3—Three reactions that take place during a powder and liquid mix.

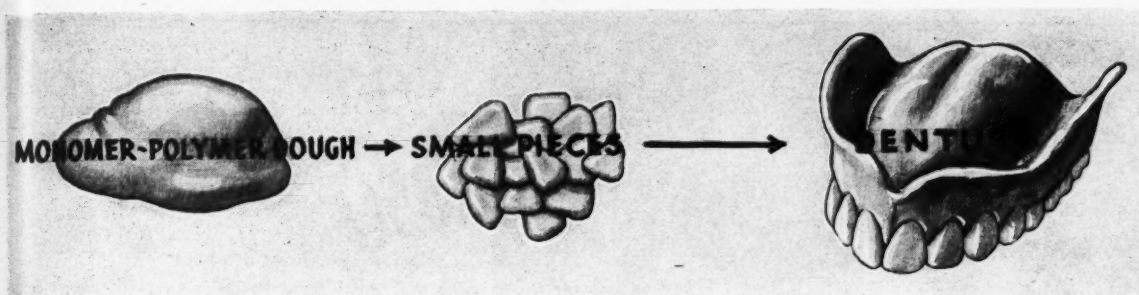


Fig. 4—Small pieces pinched or cut off from dough or cake are placed in mold with pliers to eliminate contraction away from sides of mold.

emphasized that in both cases the stiffness should be that desirable for proper packing (Fig. 3). This is the stiffness that is seen when the material can be broken off in small pieces without the tackiness or stringiness attendant a partly stiff mixture.

Packing

Ordinarily, packing seems to be a process of stretching the material into a large enough area to cover the mold. On many occasions, and especially in the use of the cake mix, it is noticed that on test packing, the denture material contracts away from the

sides of the mold, thus loosening foil, separator and sometimes teeth. This is part of the quality of elastic memory of this material and as such it should be entirely eliminated.

By pinching or cutting off small pieces about the size of a ten-cent piece, from the dough or from the cake, whichever is used, these small sections may be pressed in the mold with pliers, similar to the introduction of rubber preparatory to test packing.

It will be found that a case packed in this manner will not pull away from the sides of the mold during trial packing, thus displacing teeth,

foil, and separator as is occasionally noticed in the customary manner of packing.

The method of packing advocated here distributes the preliminary strains more evenly and allows a dispersion of these strains over the denture, so that a truer, strain-free denture will result. It is our belief that this method of packing during the test-packing stage, when additional amounts are placed, more evenly applies the initial pressures throughout the denture (Fig. 4).

32nd and Spring Garden Streets.
40th and Spruce Streets.

A Method of Local Treatment for Ulcerative Gingivitis

(Continued from page 444)

on all ulcerated surfaces and worked into the affected interdental spaces. The deposit is allowed to remain for about a minute and is then swabbed with cotton wool generously soaked in 10 volumes hydrogen dioxide when frothing will take place. This is the important part of the oxygenation and this froth must remain on the tissues from two to five minutes.

3. The gums are again swabbed with hydrogen dioxide until frothing ceases. At this stage there is a marked improvement—stagnation is removed, pain is relieved, and it is now possible to do a superficial scaling.

4. When the teeth are clear of gross calculus, a large swab is dipped into hydrogen dioxide and then into soap powder and gently rubbed on the gums so as to maintain a continuous froth for a few minutes. This softens and removes all necrotic tissue and exposes the underlying tissues to the abundant oxygen in the froth.

In acute and chronic cases this oxygen bath may be carried out two or three times daily. If the ulceration has extended on to the cheeks, or if the infection is acute or persistent in the molar region, a swab of cotton wool in the mouthwash is allowed to remain in the buccal sulcus and is changed every two hours by patient.

Before dismissing the patient he is told that, for his home treatment, he must swab his gums and use the mouthwash as directed every two hours and that his teeth must be cleaned after each meal by dipping the toothbrush into 10 volumes hydrogen dioxide and rubbing it along a bar of soap and then gently cleaning the gums and teeth, the froth being kept in the mouth for at least one minute.

Second Visit (next day)—The acute symptoms will have subsided and treatment is repeated. Scaling is continued and the interdental spaces are

kept clean by spraying with the mouthwash. Observe if the patient is cooperating with the home treatment.

Subsequent Visits—The mouth is inspected daily and areas of stagnation are treated with powdered soap and hydrogen dioxide, the pockets and interdental spaces being sprayed with the mouthwash. Calculus if not removed will hinder the response to treatment; this applies particularly to serumal calculus.

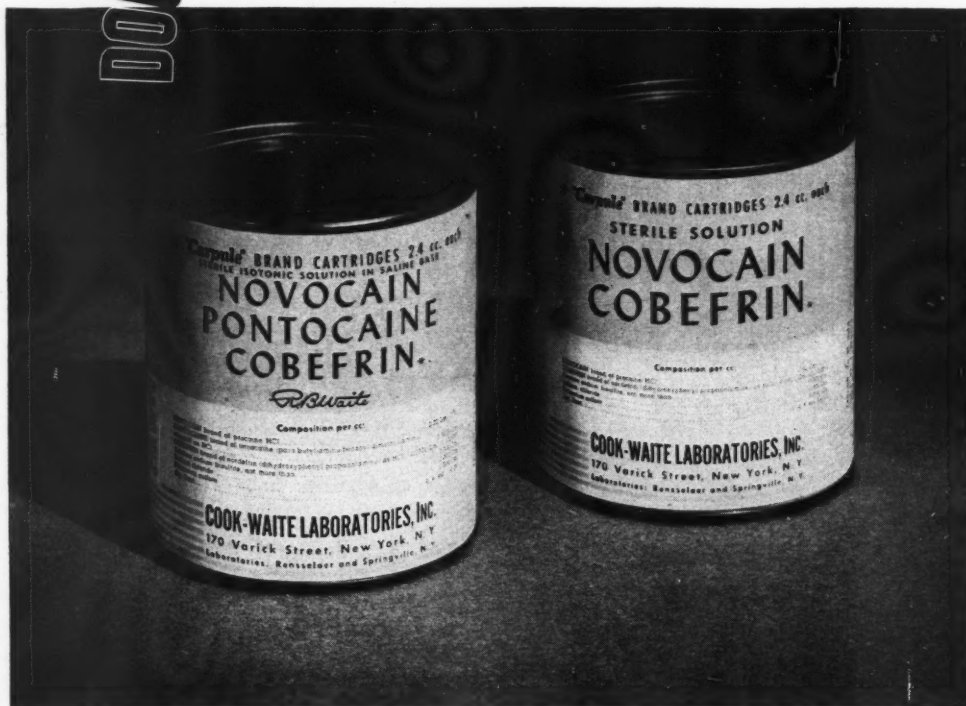
At the end of about ten to fourteen days the ulcers will have granulated and the mucous membrane hardened: the patient is then discharged with the instructions to continue cleaning his teeth with soap and hydrogen dioxide after each meal for about a month.

Avoidance of the excessive use of irritants, e.g. alcohol and tobacco, during treatment is advised and spices should be absolutely eliminated.

The patient is examined each week for about a month.

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BRICKS WITHOUT STRAW?

• Primitive hand-made bricks required straw for bonding material, and teeth cannot grow sound and strong without proper nutritional factors.

Deficiency of Vitamin A produces atrophy of the enamel-forming organ of the teeth and during their formative period probably outranks all other nutritional inadequacies¹ . . . Lack of Vitamin C results in spongy gums, loose, porotic teeth and resorbed dentin.

Moreover, hypovitaminosis D appears to be an important factor in the formation of dental caries², and two of the B-vitamins—riboflavin and niacin—are necessary for the prevention of certain pathologic oral conditions, including glossitis, cheilosis, and stomatitis.

'Esdavite' Pearls provide all these important elements and Vitamin B₁ as well. Potency is adjusted to conform with normal requirements and the average prophylactic dose is *one* pearl daily.

Each 'Esdavite' Pearl contains: Vitamin A, 5,000 U.S.P. units; Vitamin B₁, 1 mg.; Vitamin C, 30 mg.; Vitamin D, 500 U.S.P. units; Vitamin B₂ (riboflavin), 2 mg.; and Niacin amide, 10 mg. . . . Supplied in prescription boxes of 25 and 100 capsules. Sharp & Dohme, Philadelphia.

1. J. A. M. A. 111:2072, 1938—2. J. Nutrition, 15:547, 1938



'ESDAVITE' PEARLS

Contra-Angles



Gravidarum . . .

Sometimes, long before the pregnant woman begins her knitting or announces her "condition" to her family or her world, certain signs develop in her oral mucous membrane which are diagnostic. These signs include gingivitis and, occasionally, tumors. The gingivitis is often severe and sometimes the tumors by their rapid growth are frightening. Doctor W. G. Cross, a British dentist, has recently made a sensible statement on the subject:

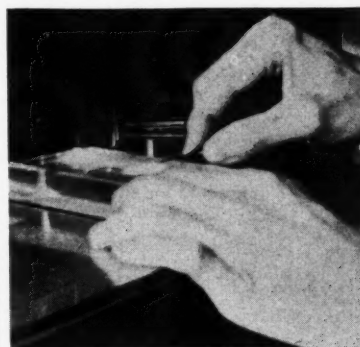
"Gingivitis gravidarum, including pregnancy gum tumours, is probably due to a combination of factors, the most important of which are vitamin

C deficiency, hormonal alterations and trauma. The last factor is probably no greater than in the non-pregnant, but metabolic alterations consequent on pregnancy leave the gums more susceptible to a traumatic gingivitis.

"Treatment should consist in the administration of large doses of ascorbic acid; e.g. 100 mg. to 300 mg. daily, and thorough antenatal dental prophylaxis, with special attention to elimination of irritant sharp edges, tartar, etc. Removal of gum tumours of pregnancy is not indicated (except in so far as they seriously threaten mouth hygiene on account of the patient's inability to use the toothbrush) because these tumours always regress shortly after parturition."

"I have Nazis for Patients" . . .

Here is a letter from an American Army dental officer who signed to fight the Nazis but finds that he is giving them beneficent treatment instead:



● Ames Crown and Bridge Cement assures greater security for the many dollars' worth of work represented by each cementation. Ames' toughness, wear resistance, great adhesive qualities are properties that make Ames Cement the outstanding choice of dentists who select a cement for its clinical superiorities. Any dealer can supply it. The W. V-B. Ames Company, Fremont, Ohio.

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AMMONIACAL SILVER NITRATE and FORMALIN

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A standard drug in dental therapeutics.



Provides a simple method for control of dental caries.

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The solution never varies in purity.

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Always in chemical balance.

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Always fresh in ampoules.

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After opening, an ampoule can be tightly sealed and will retain its chemical balance and metallic silver content until the last drop is used.

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ALWAYS DEPENDABLE

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P. N. CONDIT

204 BACK BAY

BOSTON 17, MASS.

"Little did I dream several months ago when I joined the Army that I would be performing dental treatment for—of all people—the Nazis. Back home the thought often occurred to me, especially after having read about some particularly barbaric act of atrocity committed by these sadistic monsters, that if only I could have one of these Nazis in my chair for an hour, I'd show him. And yet, not a day goes by now that several of them do not present themselves to me in the flesh, big as life and twice as docile. As these small, beardless youths sit in my chair and give me that familiar half-defiant smile together with that very worried look about the eye, it is difficult for me to realize that but for the grace of God or circumstance, these lads might be bayonetting me and my family to death with no more compunction and probably twice the relish of a savage hunter in quest of game. It takes little probing to be convinced that beneath the surface of that boyish, abashed grin, there lurks a shrewd, hard-crusted, fanatical mind, completely insulated and isolated from all humanity by a code which permits of no thought outside the alpha and omega of Nazi doctrine.

"The mouths I see are neglected mouths; the dental work of poor quality. But, of course, this may not be typical as only the worst cases present themselves for treatment. The question, 'How do you like American dentistry?' invariably brings the reply, 'Goot! German dentistry maybe not so goot, but everybody gets it. In America, only the rich.'

"The consistency of their statements gives strong indication that their 'education' is thorough and complete and continuous even here within the compounds of our Army camps. They are all sure that they will go home next year; that New York has been severely bombed; that Russia is licked—'capoot'; that England is tottering and that Hitler and Roosevelt will meet over a peace table to carve up the world between them. As if to symbolize this blessed event, they all clasp their hands, prizefight-

For Partial Dentures

Use

BROWN
recision

ATTACHMENTS

Standard for 23 Years



Proximal Contact Type

Proximal Contact	(In Two Types)	Plain Shank
Cat. No.	Size	Cat. No.
327	.085" x .025"	(Flat) None
321	.086" x .038"	(Flat) 312
322	.115" x .038"	(Flat) 313
323	.125" x .038"	(Flat) 314
324	.150" x .038"	(Flat) 305
325	.175" x .040"	(Flat) 316
None	.102" x .052"	(Oval) 304
None	.058" Dia.	(Round) 301
None	.064" Dia.	(Round) 302
None	.071" Dia.	(Round) 303

Strong • Easy Adjustable • Springy

Round — \$9.00 ea. Flat & Oval — \$10.00 ea. complete

Size Chart and Technical Literature on Request

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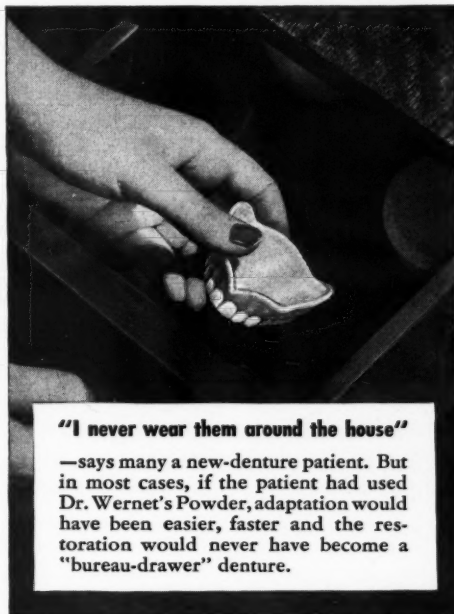
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Increased production facilities have enabled us to step up the supply of BS Polishers.

There is no reason now why you cannot have adequate quantities to meet the demands of your practice. If your dealer is low on stock, please have him write us, and we'll quickly fill his order.

Young DENTAL MFG. CO
ST. LOUIS, MO
ESTABLISHED OVER 40 YEARS AGO

"Bureau-Drawer" Dentures



"I never wear them around the house"

—says many a new-denture patient. But in most cases, if the patient had used Dr. Wernet's Powder, adaptation would have been easier, faster and the restoration would never have become a "bureau-drawer" denture.

**May be Avoided
In 7 Out of 10 Cases
by the Use of this
Denture Powder**



Into the bureau drawer goes many a new, perfectly fitting denture. Yet Dr. Wernet's Powder, in 7 out of 10 cases, would have prevented the patients' dissatisfaction, hastened adaptation to the new dentures.

Dr. Wernet's Powder is acceptable on sight to the patient, easy and pleasant to use because of its delicacy and purity. It helps adapt the patient

to the new denture and is good insurance against unfounded dissatisfaction or criticism.

Impartial laboratory tests prove Dr. Wernet's Powder to be 26.1% whiter and purer than the average of leading competitors; 50% more viscous (for maximum security) and 46.5% more absorbent (for faster denture control).

FREE SUPPLY on Request to Wernet
Dental Mfg. Co., Dept. 7-K, 190
Baldwin Ave., Jersey City, N. J.

The basic ingredient of Dr. Wernet's is the same as is used in the making of fine ice cream.

DR. WERNET'S POWDER

ADAPTS THE PATIENT TO THE DENTURE

**So Pure You Eat It
In Ice Cream**



DENTAL SNIPING

That's the provocative title of the first article in October ORAL HYGIENE. The author, Doctor Herbert G. Frankel of Cincinnati, believes that careless remarks to patients may undermine one's colleagues. Three years' service as a member of the Board of Censors of his local dental society qualify Doctor Frankel to write on this topic.

"War-time Functioning of the Canadian Dental Corps" was likewise written by a member of the profession certainly well qualified to deal with his topic, Brigadier Frank M. Lott, Director, Dental Service, of the Corps, which serves the Canadian Army, Navy, and Air Force with great success.

"How to Kill a Dental Practice," practice-management in pictures, this month tells of another way *not* to win patients and keep them.

"State Picket Fences," by Samuel R. Lewis, A.B., J.D., deals with the way dentists are hampered by artificial state barriers—a topic ORAL HYGIENE has been harping on for many long years.

"Dental Service in North Africa," recounts the wartime life of a Brooklyn dentist, Captain Francis J. Lough-



lin (DC) USA. It's like being a traveling circus performer, says Captain Loughlin.

"Reorganize the Army and Navy Dental Corps," an article by the editor, explains why freedom of action for dental officers is essential.

"A Dentist Fills the Bill," by Shirley F. Poritzky, is in a lighter vein. It's about a duck who regained prestige and a long-lost quack—thanks to Doctor Poritzky.

Eight of Oral Hygiene's popular departments help to make October another lively issue.

er style, accompanied by the appropriate gestures.

"Needless to say, whatever our personal feelings may be, as officers of the U. S. Army, we abide strictly by the rules of the Hague Conference, carrying out our duties as dentists, objectively and creditably, we hope.

"The other day one of our fellow dentists had just performed a difficult extraction so painlessly and efficiently as to arouse voluble enthusiasm on the part of one of the Nazis. Becoming effusive in his appreciation, he attempted to grasp the hand of the dentist. But the dentist drew himself up haughtily and demanded icily, trying hard to control himself, 'Did I hurt you or mistreat you?' 'Nein,' he replied. 'Well, I'm a Jew,' he snarled through clenched teeth. The prisoner recoiled as if struck by a blow, completely nonplussed. The incongruity of the situation began to dawn on him. His face turned pale and his body trembled as he clutched a nearby table for support. His eyes darted here and there as he sought for help from his two comrades. But they in no uncertain gestures dissociated themselves from him. After a masterly effort, he managed to regain his composure sufficiently to mumble, 'There are good Jews and bad Jews. We are only against the Jewish capitalists.' With that, he began to rub his forefinger and middle finger against the thumb in such a mechanical way as to give the impression that he had satisfactorily answered question number 8 in the catechism of Nazi ideology. Finally, he shrank to the bench alongside his friends and there ensued such a series of shrugs and grimaces which could mean only one thing in any language: 'That's what you get for sticking out your fool neck.'

"These prisoners work in the fields nearby or at the camp doing odd jobs. They are well treated and on the average have gained about 8 pounds each since they arrived in this country.

"Wherever the prisoners are stationed, discussion waxes hotly among the soldiers and civilians as to whether or not we are right in showing

Oral Hygiene

these Nazis as much consideration as we do. One thing is certain, however, and that is that when they go back to Germany after the war, they will carry back with them a high and unqualified appreciation for American dentistry."—Army Officer.

New Use for Mouth Mirror . . .

The dental mirror is now helping to blast holes in the Axis. This picture made by the Westinghouse Photo Service shows a dental mir-



ror in use to locate rough spurs on the inside of bomb fuses. The use of dental mirrors saves valuable time in the manufacturing of these instruments of war.

Fanciful Advertising . . .

Some advertising copy writers take a swig of bug juice before sitting down to compose their flamboyant essays. When these writers put aside the blinders and gaze into the world of the future, they are likely to get enthusiastic and picture a place with music in every bathroom and automobiles with hidden camping equipment that springs out from under the fenders with a push of the button. They describe vitamins that are broadcast on frequency modulation radio bands and visualize a world where you sleep on mattresses of comet's hair. It is the opinion of a business man who sounds sensible to me that such imaginative copy writing can hurt business rather than help it. The *Chicago Sun* carried his story:

"Fanciful advertising of radically changed postwar products is building

now I get
Better Impressions
with....

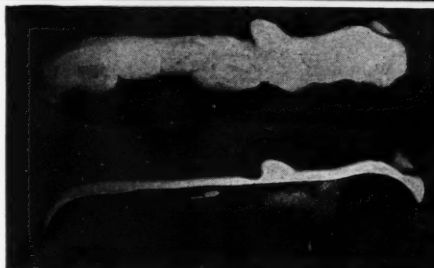


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They MUST be BETTER, or your money will be refunded. That is our GUARANTEE.

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Two separate impressions of the same mouth on bases made from the same model. Note the very close resemblance of the two impressions. The ability of the paste to "creep" up to the peripheral border is shown on the lower impression where the paste has been cut away flush with the base plate.

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INTERSTATE DENTAL CO., INC.

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LEE SMITH CERTIFIED IMPRESSION COMPOUND INSURES BETTER IMPRESSIONS



Lee Smith Certified Compound is an all-purpose impression material highly efficient in general prosthetic work and a variety of other techniques. It requires less kneading to give you smoother texture for greater detail and its flaming and trimming qualities are unsurpassed. Your choice of convenient shaped cakes, 1/4 pound to the box . . . or tracing stick form, 15 sticks to the box.

Certified to surpass A. D. A. Spec. No. 3

LEE S. SMITH & SON MFG. COMPANY
7325 PENN AVENUE, PITTSBURGH 8, PENNA.

up sales resistance which will have to be removed, with a return to civilian production, J. J. Nance, vice-president of the Zenith Radio Corp., warned the Chicago Sales Executive Club yesterday.

"He cautioned that if business firms succeed in converting any substantial portion of the public to the belief that revolutionary new products will be available at the end of the war the effect may be that people will refuse to buy, and the manufacturer can record the results of his 'peeka-booo' advertising campaign in red ink.

"The immediate postwar market should be a 'salesman's paradise,' Mr. Nance declared, with a public's longing for products matched by money in its hands. Dealers will be screaming for something to sell and won't be too particular whether a product is styled in a teardrop design or only streamlined, he asserted."

"Indirectitis" Is Not Such a Bad Disease . . .

We have had a lot of fun recently with the good letters that have been received by this department. Here is one from Doctor Harry Maeth of Mosinee, Wisconsin, in answer to the "Indirectitis" article by Doctor Lentz which appeared here in August:

"Whether Robert F. Lentz, of Anna, Illinois, in Contra-Angles, August, 1943, is trying to amuse us, or simply berating some of his fellow practitioners, is not quite clear. Parts of his essay on 'Indirectitis' contain some balderdash of a somewhat tart flavor. The Doctor uses some rather disparaging nomenclature when he classifies certain dentists as 'addicts' and 'tinkerers.'

"At the outset, it appears that Doctor Lentz has not grasped the fundamental idea that practically all of dentistry's restorative jobs are tied up with the indirect approach. All denture construction, including bridgework and abutments, is, of necessity, and not by preference, performed by the indirect system. Porcelain jacket crowns, and acrylic restorations for masticatory surfaces, the same way: indirect. Orthodontic

appliances, certainly not by the direct method!

"The indirect gold inlay is only one example in the entire array of indirect usage.

"The practitioner from Anna, Illinois, would really learn and profit by reading 'Gold Inlays by the Indirect System' by Henry Webster Gillett and Albert J. Irving. These recognized authorities can hardly be included in the army of 'tinkerers' of Doctor Lentz's classification. Incidentally, the late Doctor Henry Webster Gillett was one of America's out-

standing dentists. He was a great man as well as a great dentist. I had the pleasure of knowing him well.

"Direct method and indirect method for the construction of the gold inlay are essentially two distinct schools of thought. Neither is the better system. Each has its place in practice. The discerning operator, although skilled in the direct method, can to advantage apply the indirect technique from time to time. The condition of a working schedule of appointments usually dictates the time allowance, which in turn be-

MAXIMUM at every step.

WHEN packed into the flask, most acrylic mixes look alike. But, Acralite provides longer working time; its plasticity is maintained for a more extended period. *As a result, many cases may be packed with a single mix.*

ACRALITE is made under rigid controls. It is tested in our plant to more-than-meet A. D. A. Specification No. 12. That's why you can *depend* upon the strength, color stability and adaptability of ACRALITE. That's why hundreds of thousands of ACRALITE dentures are efficient and natural-looking years after they were made.

For dentures of distinction — standardize on ACRALITE.

ACRALITE

REG. U. S.

PAT. OFF.



comes the deciding factor of the choice of a procedure. The versatile practitioner finds it profitable to employ the indirect system for gold inlays when his chair time is crowded.

"It is not a question whether anyone is able to make 'eight wax patterns' in a given time, on a wager. Whether or not such an approach to dentistry connotes any unusual skill, it does, in a measure, indicate a highly developed ego, which smacks somewhat of the recently and widely discussed, and thoroughly condemned, innovation of assembly line den-

tistry which was the brain child of a Philadelphia practitioner.

"The majority of dentists are average men and average operators who produce average dentistry. That is the point of view of the best minds in the profession. If a man is a good direct operator, exclusively, that is good. If he happens to be a capable indirect operator, exclusively, that is also good. If he happens to be able to use both methods, that is still better; but still he is not a 'tinkerer' or an 'indirect addict.' Incidentally, a 'perfect' pattern does not always

assure a perfectly cast inlay. Further discussion on that point would be superfluous."

"I Am So Nervous, Doctor" . . .

There aren't many days in dental practice which pass without some patient's mentioning his apprehensions and nervousness. Part of the dislike of the dental experience probably comes from the confining nature of the discomfort and the conditions under which the discomfort is registered. Writing in the *Journal of the Michigan State Dental Society*, Leonard E. Himler, A.B., M.D. of Ann Arbor, has this to say:

"... Sherrington, the renowned English neurologist, once made a statement that is very helpful, particularly in the management of nervous patients: 'The most satisfactory release of instinctual tension is action, the least satisfactory is thought, and speech stands half-way in between.' Stated another way, the hardest thing to do when one is in a state of fear or dread is just to sit and think. The dentist should keep this in mind, and plan to drain off some of the patient's emotional energy by suggesting various simple activities. The technique of instructing the patient that he is at liberty to interrupt operations by merely raising his hand or by tapping on the chair gives many patients a great sense of security, and when this has been accomplished, the privilege is seldom abused. The feeling of being an active participant rather than a helpless victim acts as an effective antidote to fear and its accompanying heightened sensitivity to pain.

"Next to action, speech has its place in relieving instinctual tension. One of the most effective elements in psychiatric treatment is 'talking out,' or psychological ventilation, as it has been called. When there is opportunity for conversation, the dentist can utilize this principle by encouraging the patient to talk about subjects concerning which he has feelings of mastery or pleasure, such as hobbies, personal accomplishments or special interests. A helpful relationship can be built up if pa-

PROTECTION



tients are given a sense of freedom which includes even expression of their fears. Rapport, understanding, and cooperation grow in such an atmosphere. By contrast, such techniques as exhortations to 'forget the pain,' 'buck up,' and 'be a man,' are not only useless but may even increase symptoms.

"The employment of the proper psychotherapeutic techniques becomes particularly important in the practice of dentistry with children. Children can give the dentist's personality the acid test. Dentists cannot evade their professional responsibilities in this area by giving disinterest or dislike as an excuse for deficiencies in dealing with young patients. Aside from a few badly trained children who really need psychiatric care before they are ready for dental treatment, the great majority of normal children make excellent patients if the dentist will but adapt himself to their individual personalities. With children as with some adults one must avoid giving unconvincing over-assurances or suggestions which stir up reactions contrary to those desired. Negative commands such as, 'Don't put your tongue near the drill,' draw attention to possible danger without suggesting a remedy. Positive suggestions which aim at giving the patient a sense of constructive participation provide the best antidote against fear."

Anyone who has observed the psychologic techniques of dentists should be pretty well convinced that much of the fear of the dental experience is produced by dentists themselves. We are familiar with the details of the procedures we employ; consequently, we are often unable to get inside the patient's mind to understand that he is not familiar with the experience. Our auditory senses are accustomed to the noise of the dental bur; we are subjected to it daily and familiarity breeds indifference. The patient who experiences this noise by bone conduction through the structures of his head experiences an amplification of the unpleasant sound.

In taking impressions, we are in-

Truly Anatomic, Truly Physiologic Impressions



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Adaptol
TRADE MARK

Jelenko "Dentur-test" is a valuable aid in revealing over- or under-extensions.

"Jelenko "Spotex" accurately transfers hard and soft areas from tissues to impressions.

Send for Technic Literature and Kaye Prosthetic Charts.

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Manufacturers of Dental Golds and Specialties.

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- 1 — Test the impression tray (or in rebasing, the denture borders) and correct for over- or under-extension.*
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- 3 — Apply softened "Adaptol" and spread out with a hot spatula. Temper "Adaptol"-coated impression or denture by immersing in tepid water (110° F.).
- 4 — Seat impression, muscle-mould and chill with cold water.

The resulting impression will be perfectly moulded to the muscles and every detail of the tissues.

When using "Adaptol," take your time. It will not set in the mouth until chilled with cold water, and may be resoftened and corrected any number of times.

terested in securing the details of the dental tissues; we are likely not to be concerned with the psychiatric aspects of the experience. The fear of suffocation, of strangulation—these are often uppermost in the patient's mind. Blood to us is a daily crimson sight but to the patient, it is his blood that is being spilled, and even the few drops that come from scaling the teeth is often enough to throw him into an apprehensive dither.

We should be particularly under-

standing of men and women in the climacteria. When the function of the endocrine glands is disturbed, we frequently find manifestations in the soft tissues of the mouth. We have mentioned the gingivitis of the gravidarum. There is also the gingivitis of the climacterium. Particularly women who come to us during the menopause with their histories of fleeting pains and aches, of apprehension and dreads, should be treated with unusual consideration.—E. J. R.

*requirements of the discs
These little discs are a must
have for all particular operators.
I cannot imagine a prophylaxis
treatment where there is a satis-
factory substitute for these discs.
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THE Small, Knife-Edged Discs
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or dry. The Pumice is in the Discs!

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DENTAL MEETING

Dates

Postgraduate Assemblies on War
Medicine and Surgery, Illinois State
Dental Society, Fort Armstrong Ho-

tel, Rock Island, October 25; Broad-
view Hotel, East St. Louis, October
27; Orlando Hotel, Decatur, October
29.

New York Society of Orthodon-
tists, regular meeting, New York
City, November 8-9.

Ohio State Dental Society, annual
meeting, Cleveland, November 7-10.

Rhode Island Dental Society, an-
nual meeting, Providence, January,
1944.

California State Board of Dental
Examiners, regular meeting, October
25 at San Francisco; November 29
at Los Angeles. For information write
to Doctor Kenneth I. Nesbitt, 515
Van Ness Avenue, San Francisco.

New Jersey State Board of Dental
Examiners, regular meeting, Trenton,
June 28-July 2. For information write
to Doctor J. Frank Burke, 150 East
State Street, Trenton.

The Tennessee State Dental Asso-
ciation, sixty-sixth annual meeting,
Hotel Andrew Jackson, Nashville,
November 21-24.

The Florida State Board of Dental
Examiners, annual meeting, Seminole
Hotel, Jacksonville, November 29
through December 2. For information
write to Doctor L. D. Pankey, Sec'y.,
138 Alhambra Circle, Coral Gables.

Ohio State Board of Dental Exami-
ners, regular meeting, Western Re-
serve School of Dentistry, Cleveland,
October 18-20; and at the Ohio State
University College of Dentistry, Co-
lumbus, November 29-December 1.
For information write to Doctor Earl
D. Lowry, Secretary, 79 East State
Street, Columbus.

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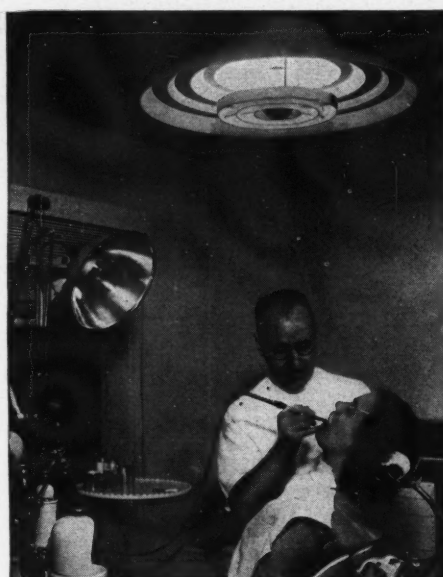
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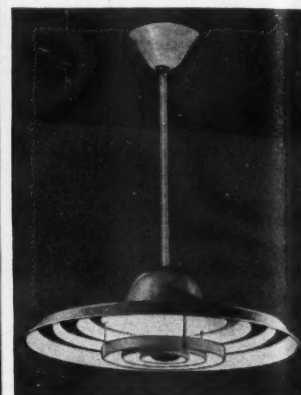
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Dr.
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 for ceiling under 10 feet high

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 for ceiling over 10 feet high



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The "G-V" (General Vision) Light was especially designed for doctor's offices. It gives proper shadow-reducing light all over the doctor's working area plus fine general room lighting. It reduces eye strain and supplies a soft restful light without glare. Ask your dealer for the complete story of this fine quality shadow-reducing "day and night" light.

WILMOT CASTLE COMPANY, 1123 University Ave., Rochester, N. Y.

CASTLE LIGHTS

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